INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) CAPACITY BUILDING FOR TEACHERS AND SCHOOL EFFECTIVENESS

By

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Abstract
The study sought to find out the effective strategies for ICT capacity building for teachers in secondary schools in Moro Local Government Area of Kwara State. The research design for the study was descriptive research design. Randm sampling technique was used to select 10 out of 24 senior secondary schools in the area of study. Stratified random sampling was used to select 10 teachers from each of the sampled school making 100 respondents. Three research questions were raised to guide the study. Self-designed instrument tagged "Teachers' Capacity Building through Information and Communication Technology and School effectiveness" (TCBICTSE) was used as instrument for data collection. The research questions were answered using mean, and any mean score equal to or higher than 2.5 implied agreed to the item, and lower than 2.5 implied disagreed to the items. The instrument was validated by three experts in the field of Curriculum, and Test and Measurement. The reliability of 0.87 was obtained using Cronbach Alpha. Findings of the study revealed that Information and Communication Technologies (ICTs) is not being fully utilized in the study area, and that there are some strategies to be put in place to ensure effective ICT capacity building for teachers to be ICT compliance. It was recommended among others that intensive training of teachers on Information and Communication Technologies (ICTs) should be carried out periodically to enable teacher to be ICT compliance, Provision of ICT facilities to teachers and encourage them to use it for instructional delivery.
Keywords: Capacity Building, Information and Communication Technology, Secondary Schools, Effectiveness

Introduction

Information and Communication Technologies (ICTs) have the potential to alter greatly how schools are run and how students learn. To achieve this, a dedicated manager or school head put in place should be able to articulate and mobilize staff to achieve relevant technology goals. The role of technology in education is rapidly becoming one of the most important and widely discussed issues in contemporary Nigerian education scene. According to Onfah, Onfah and Owodunni (2022), technology simply means electronic tools applications in everyday activities. Information and Communication Technologies (ICTs) is a fusion of information technology and communication technology. Information and Communication Technologies (ICTs) refers to technologies that provide access to information through telecommunications. It is similar to Information Technology (IT) but focuses primarily on communication technologies. This includes the internet, wireless networks, cell phones, and other communication mediums (Ezeanyaeji and Mgbeafulike, 2020).

According to Sukanta (2012), Information and Communication Technologies (ICTs) is the varied collection of technological gear and resources which are made use of to communicate. They are also made use to generate, distribute, collect, and administer information. Shan (2013) posited that Information and Communication Technologies (ICTs) includes computers, the internet, and electronic delivery systems such as radios, televisions, and projectors among others, and is widely used in education sector. Kent and Facer (2014) indicated that school is an important environment in which students participate in a wide range of computer activities while the home serves as a complimentary site for regular engagement in a narrower set of computer activities. Federal Republic of Nigeria (2014) stated that in recognition of the prominent role of Information and Technology (IT) in advancing knowledge and skills necessary for effective functioning in a knowledge-based world, Government shall provide adequate infrastructure and develop capacity for effective utilization of Information Technology (IT). Esu (2018) opined that

capacity building requires new strategies for instructional delivery process, increased roles from stakeholders (teachers, government, school administrators and communities) in providing more access to information and experience through global networks and pools of knowledge. Effective use of ICT in schools guarantees more access to information and experiences in the new era of digitalization. This implies that there is an important link between education and ICT in a knowledge society to meet challenges of the 21st century. Adamu (2016) posited that the link between the two is that utilization of modern ICT in education potentially enhances the effectiveness and efficiency of teaching and therefore provides a notion with a proof of well trained and skilled labour to meet the demand of both the public and the private sectors.

According to Ugwu and Oboegbulem (2011), capacity building in Information and Communication Technologies (ICT) refers to the strategies, roles, practices and skills through which the staff personnel are helped to develop competency in the use of ICT for effective administration of schools. Bello (2016), school effectiveness involves several components such as administration, functioning, leadership behaviours, teachers' morale, level of trust, culture and climate, parenral involvement, community support, teachers' commitment, loyalty and satisfaction of teachers through various capacity building prgrammes. Therefore, a school is considered to be effective when it continuously improves its success history through effective teaching which reflects positively on students' academic performance, and general administration of school. One of the ways teachers in which this can be achieved is for the teachers to be ICT compliance. This will enable them to acquire relevant skills and competence for teaching and learning. Emenike (2013) believed that application of ICT in teaching and learning will enhance instructional delivery, reduce occupational stress and increase students/ academic performance. Amaefule (2019) asserted that the application of ICT in education has made the traditional application of paper obsolete. He added that the computer facilities have greatly improved the process of information, organization and management, as assess and retrieval of books or information is now a matter of seconds with a click of application or keyboard. Additionally, the world is dynamic, and moving towards digitalization, and so education sector need to be dynamic, and key in so as to meet up with international best practices. Therefore, every sector, education inclusive needs to be ICT compliance in order to carry out their operations effectively. A preliminary visit to most of the schools in Moro Local Government Secondary Schools in Kwara State revealed that ICT facilities are not available in most of the schools, and that the staff personnel do not have their own personal ICT facilities. Based on this, they are not vast in the use of ICT, and as such hindering them from carrying out their pedagogical roles effectively. Where there are few ICT facilities, no personnel to handle such facilities. This study therefore, aimed at evaluating teachers' capacity building through information and communication technologies (ICTs) and school effectiveness in Moro Local Government Area of Kwara State.

Purpose of the Study
The main purpose of the study is to determine the relationship between teachers' capacity building through Information and Communication Technologies (ICTs) and school effectiveness in Moro Local Government Area of Kwara State. Specifically, the objectives were to:
1. Determine the strategies that are appropriate for ICT capacity building for teachers in senior secondary schools in Moro Local Government Area for school effectiveness.
2. Determine the constraints to effective use of ICT in instructional delivery in senior secondary schools in Moro Local Government Area of Kwara State.
3. Suggest ways of improving effective usage of Information and Communication Technologies (ICTs) by teachers in Moro Local Government Area for school effectiveness.

Research Questions
The following research questions were raised to guide the study:
1. What are the appropriate ICT capacity building strategies for teachers in senior secondary schools in Moro Local Government Area of Kwara State for school effectiveness?
2. What are the constraints to effective use of ICT in instructional delivery in senior secondary schools in Moro Local Government Area of Kwara State?
3. What are the ways of improving the effective usage of Information Communication Technologies (ICTs) by secondary schools' teachers in Moro Local Government Area for school effectiveness?

Methodology

The study adopted descriptive survey research design. A sample of 100 teachers were drawn from 10 public senior secondary schools in Moro Local Government Area, Kwara State. Stratified random sampling technique was used to select 10 out of 24 senior secondary schools in the area of study. The instrument used for data collection was a questionnaire tagged "Information and Communication Technology Training and School Effectiveness Questionnaire" (ICTTSEQ). The instrument was structured on a four-point scale, with options provided as Strongly Agreed (SA), Agreed (A), Disagreed (D), and Strongly Disagreed (SD). The instrument was validated by three (3) experts in curriculum and measurement and evaluation. It was subjected to test-re-test reliability, and the reliability index of .87 was obtained using Cronbach Alpha. Data gathered were analyzed using mean for each item of the questionnaire. Any mean score above 2.5 indicate agreed, while less than 2.5 indicate disagreed.

Results

Research Question 1:
What are the appropriate ICT capacity building strategies for teachers in senior secondary schools in Moro Local Government Area for school effectiveness?

Table 1: Mean Responses of Teachers on ICT Capacity Building Strategies

S.N	Items	SA	A	D	SD	X
1	Provision of computers with internet facilities in schools inform of laboratories.	47 (188)	30 (90)	13 (26)	10 (10)	3.14
2	Training of staff personnel on knowledge of operating	49 (196)	31 (93)	15 (30)	5 (5)	3.24
3	Training of staff on the use of scanners, digital projectors and printing.	32 (128)	29 (87)	25 (50)	14 (14)	2.79
4	training of staff on the use of disc storage devices e. g. flash drive, CD Rom.	44 (176)	35 (105)	13 (26)	8 (8)	3.15
5	Training of staff on the use of application Software e. g. word processors, spread sheet.	29 (116)	32 (96)	25 (50)	14 (14)	2.76
6	Training staff on the use of communication Applications e. g. e-mail programmes and Internet browser.	40 (160)	25 (75)	27 (54)	8 (8)	2.97
7	Provision of regular power supply in schools.	52 (208)	38 (114)	7 (14)	3 (3)	3.39
8	Introducing online learning like zoom, Google meet, online module etc.	28 (112)	30 (90)	25 (50)	17 (17)	2.69
9	Training of staff on the use of online Applications for learning.	25 (100)	32 (96)	29 (58)	14 (14)	2.68
10	Training of staff on exploring devices and folder management.	27 (108)	33 (99)	27 (54)	13 (13)	2.74
11	Strengthening the security situation of the schools.	24 (96)	35 (105)	23 (46)	18 (18)	2.65
.12	Opportunity from the government to the Staff for possession of individual laptops With internet connectivity.	45 (180)	29 (87)	18 (36)	8 (8)	3.11

N=100, GRAND MEAN=2.94

Table 1 above shows that respondents agreed to all twelve (12) items, with the highest and lowest means of 3.39 and 2.74 respectively. This implies that respondents agreed to all items on the strategies for ICT capacity building.

Research Question 2:

What are the constraints to effective use of ICT in instructional delivery in senior secondary schools in Moro Local Government Area of Kwara State?

Table 2: Mean Responses of Teachers on Effective use of ICT in Instructional Delivery

S/N	Items	SA	A	D	SD	X
1	Unequipped ICT labs and Substandard ICT Facilities.	59 (236)	24 (72)	11 (22)	6 (6)	3.36
2	Lack of technical know-how in Manipulating CAI Packages.	48 (192)	33 (99)	11 (22)	8 (8)	3.21
3	Lack of interest in the use of ICT facilities by some teachers.	35 (140)	27 (81)	26 (52)	12 (12)	2.55
4	Epileptic power supply which hinders usage of CAI.	54 (216)	27 (81)	13 (36)	6 (6)	3.39
5	Lack of internet facilities in schools.	58 (232)	29 (87)	8 (16)	5 (5)	3.34
6	Lack of access to computer by the teachers and students.	39 (156)	23 (69)	18 (36)	21 (21)	2.82
7	High cost of resources required to design and develop CAI packages for instructional delivery.	40 (160)	24 (72)	21 (42)	15 (15)	2.89
8	Lack of technical support staff to handle ICT facilities.	45 (180)	27 (81)	13 (26)	15 (15)	3.02
9	Inadequate funding for procurement of CAI packages and maintenance of computer system.	41 (164)	25 (75)	21 (42)	13 (13)	2.94
10	Lack of training for teachers on use of CAI for instructional delivery.	33 (132)	35 (105)	21 (42)	11 (11)	2.90

Table 2 above shows that respondents agreed to all ten (10) items, with highest and lowest means of 3.39 and 2.55 respectively. The grand mean of 3.04 is an indication that respondents agreed that there challenges in the use of ICT in instructional delivery in senior secondary schools in Moro Local Government Area secondary schools.

Research Question 3:

What are the ways of improving the effective usage of Information Communication Technologies (ICTs) by secondary schools' teachers in Moro Local Government Area for school effectiveness?

Table 3: Mean Responses of Teachers on Ways to Improve Usage of ICT

S/N	Items	SA	A	D	SD	X
1	provision of standby generator to cushion the effect of interrupted power supply	55 (220)	27 (81)	13 (26)	5 (5)	3,32
2	training an retraining of teachers on ICT skills required for adoption of CAI in the classroom	43 (172)	24 (72)	23 (46)	10 (10)	3.00
3	Provision of computer facilities for teaching and learning by government, NGO, PTA or school management.	52 (208)	25 (75)	18 (36)	5 (5)	3.12
4	Employment of technical support staff that will provide technical support for applications of CAI.	49 (196)	30 (90)	13 (26)	8 (8)	3.20
5	Provision of funds for the design and development of CAI packages.	25 (100)	31 (93)	30 (60)	14 (14)	2.67
6	Providing teachers with incentives to encourage them in teaching with CAI packages.	24 (96)	38 (114)	29 (58)	9 (9)	2.71
7	Granting teachers and students frequent access to computer laboratories and facilities.	42 (168)	28 (84)	21 (42)	9 (9)	3.03
8	Provision of free internet facilities for Applications by teachers and students by management.	23 (92)	38 (114)	25 (50)	14 (14)	2.70

Table 3 above shows that respondents also agreed to all eight (8) items with the highest and lowest mean of 3.32 and 2.67 respectively, with the grand mean of 2.97. this indicated that respondents agreed to all items aimed at finding ways to improve the usage of ICT by secondary school teachers in Moro Local Government Area secondary schools.

Discussion

The findings of the study on research question one showed that respondents agreed to all twelve (12) items. The item with the highest means in descending order are: provision of regular power supply in schools, training of teachers on knowledge of operating computer, training of staff on the use of disc storage devices e.g. flash drives, CD Rom, provision of computer with internet facilities in schools among others. All other items in the cluster also have their mean above 2.5. This indicated that majority of the respondents agreed with the statements. This is in agreement with the findings of Ugwu and Oboegbulem (2011a) that some strategies should be adopted for building ICT capacity of staff personnel in post primary schools. Some of these strategies according to Ugwu and Oboegbullem (2011b) include: provision of computer and internet facilities to schools, training of staff personnel on knowledge of operating windows n among others.

The findings of the study on research question two showed that respondents agreed to all ten (10) items. The items with the highest mean in descending order include: epileptic power supply which hinder usage CAI, unequipped ICT lab and substandard ICT facilities, lack of technical know-how in operating Cal packages, lack of technical support staff among others. This also indicated that majority of the respondents agreed with the statements. This is n tandem with the findings of Orifah, Orifah and Owodunni (2022) that senior secondary school teachers are faced with with challenges in the process of CAI in instructional delivery process. Among the constraints identified in the study of Orifah, Orifah and Owodunni (2022) include poor competency level of teachers in manipulating CAI packages, irregular power supply for application of CAI packages, inadequate computer facilities in classroom and laboratories

among others. The findings of the study on research question three showed that respondents agreed to all eight (8) items. The items with the highest means in descending order include; provision of standby generator to cushion the effect of interrupted power supply, employment of technical support staff that will provide technical support for the the application of CAI, provision of computer facilities for teaching and learning by stakeholders, granting teachers and students frequent access to computer laboratories and facilities among others. This finding is in line with Ogwu (2011b) and Olorundare (2016) that adequate and functional ICT equipment and facilities be supplied to schools by the Nigerian government in order to encourage teachers and students to maximize full potential of CAI.

Conclusion

Information and Communication Technologies (ICTs) is not being fully utilized by teachers for instructional delivery in the area of study. Teachers willing to use ICT are faced with many challenges. Therefore, there is need to fully integrate ICT in instructional delivery for school effectiveness. Thus, the strategies for building ICT capacity of teachers in secondary schools in Moro Local Government Area should be adopted, and all the challenges hindering effective usage of ICT in instructional delivery should be tackled head-on in order to attain international best practice in education.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. Intensive training of teachers on Information and Communication Technologies (ICTs) should be carried out periodically to enable teacher to be ICT compliance.
2. Provision of ICT facilities to teachers and encourage them to use it for instructional delivery.
3. Regular power supply to schools for uninterrupted computer operation system.
4. Workshops and seminars should be frequently organized for teachers on ICT in order to be abreast of new happenings in the education industry.
5. Issues relating to challenges in effective use of ICT in schools should be addressed by stakeholders.

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